

POPULAR AVIATION

Combined With

Aeronautics

A magazine for everyone interested in Gliders—Lightplanes—Models

Volume 8

JANUARY, 1931

Number 1

Table of Contents

FEATURE ARTICLES

An Airy Chat with the Editor	10
<u>A Mission to Hunland</u>	12
<u>Tricks in Handling Amphibians</u>	17
<u>The Light Planes of Italy</u>	20
<u>Ocean Flights Are the Bunk!</u>	22
<u>W. A. Butcher Wins Popular Aviation Prize</u>	25
<u>How to Power Your Rocket Model</u>	27
<u>The Fate of a Pioneer</u>	30
<u>The "Gravitel"</u>	32
<u>How to Build the Heath Parasol</u>	33
<u>Spotting Mines from a Balloon</u>	37
<u>How to Demonstrate an Airplane</u>	39
<u>Accidents Will Happen!</u>	41
<u>Use Your Watch as a Compass</u>	44
<u>Practical Lessons in Flying</u>	45
<u>What Your Handwriting Reveals</u>	47
<u>Model Department</u>	48
<u>Women's Activities</u>	52

THE PICK OF THE BRIEFS

Rowboat Equipped with Airplane Controls	15	What Is the Caterpillar Club?	35
New Sportster Offers Trim Design	19	Details of a Catapult Apparatus	36
Unique Craft Has Remarkable Lifting Ability	21	Automatic Airplane	36
Lost Instrument Found by Fisherman	23	Scale Drawing of Travel Air Mystery Ship	40
What Is a Wobble Pump?	25	Some Pointers on Parachute Jumping	43
Tales of the Caterpillar Club	29	The Aeronca Lightplane Motor	43
Stabilaire Monoplane Has Unusual Features	31	New Model All-Metal Amphibian Approved	43
		A Principle of Air Flow	44

—and 50 others!

POPULAR AVIATION combined with Aeronautics. Volume 8, Number 1. Published monthly by Aeronautical Publications, Inc., at 608 South Dearborn St., Chicago, U. S. A. William B. Ziff, Publisher; B. G. Davis, Editor; David E. McMillan, Jr., Art Director and Associate Editor. New York Office, 551 Fifth Avenue, New York City. Subscription \$2.50 per year; single copies, 25 cents; foreign postage, \$1.00 per year extra. All contributions paid for at regular rates, but the publishers cannot be responsible for the loss of any manuscripts or materials submitted. Entered as second-class matter, July 19, 1930, at the Post Office, Chicago, Illinois, under the act of March 3, 1879. Copyright, 1930, by Aeronautical Publications, Inc.

Spotting Mines from a Balloon

Unhonored and practically unknown, the mine-sweepers cleared the seas for commerce. Danger and excitement faced the balloonists who directed the search for sunken mines.

by

LIEUT. AUDREY L. C.
WHITE

BEING up in a kite balloon, towed by a ship across mine infested waters, is perhaps not one of the most pleasant of sensations.

Nor does it improve one's peace of mind to realize that possibly the slightest move of the rudder or propelling mechanism may be sufficient to cause the boat to touch one of the horns of the mine and blow it to pieces.

The nervous tension of the men in the balloon overhead who are directing every move of the ship below them by telephone is often very great and frequently the safety of the boat, when operating in these mine fields, is in their hands. Yet such are some of the many experiences which many of our mine spotters went through after the war in cleaning up the seas and making them clear for peace-time navigation.

It will be remembered that large numbers of mines were laid during the war by the Allied Powers and the enemy countries as well. The largest and most important of these mine fields were in the North Sea, the Eastern Mediterranean and the Aegean Sea leading to the Dardanelles.

In the North Sea, the Northern Barrage, which extended from the Orkney Islands to a point off the Norwegian Coast, was laid by American mine lay-

In the Eastern Mediterranean and in the Aegean Sea there were large mine-infested areas, the worst of which were around the approaches to the Dardanelles, which were laid by both British and Turkish mine layers during the war.

A few months after the signing of the Armistice the Allied Powers decided that no time should be wasted in sweeping the seas of these mine-infested areas. The work of mine sweeping was a very dangerous one, since the boats engaged in this work could at any time set off a mine and be blown up. This happened more than once. All of the men who served on these boats were volunteers who were willing to take the risk and carry on this very important task of clearing the seas and opening them up again for peace-time shipping.

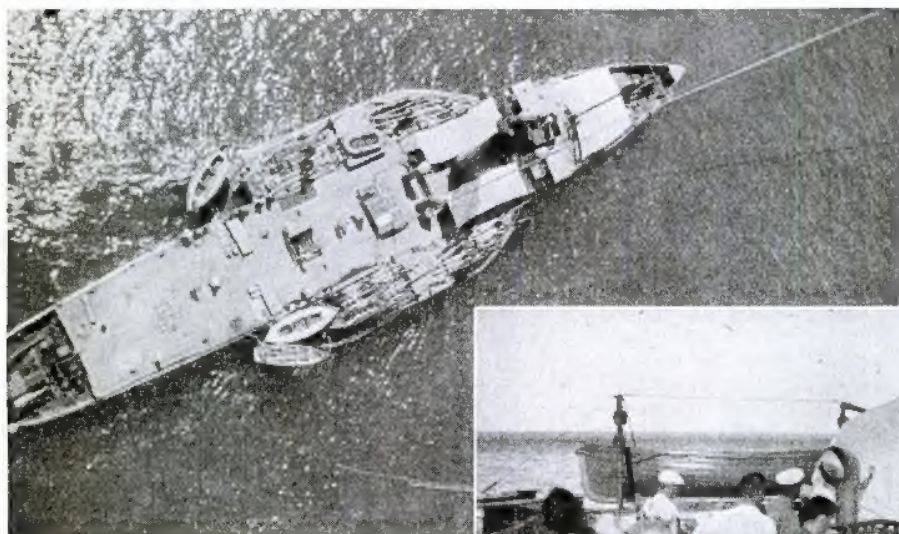
Little has ever been written about these men who, day in and day out, swept the seas in all kinds of weather and at great risk in ridding the commerce lanes of the dangers that lurked below the surface of the waves, yet their work was long and exhausting and they are among the unsung heroes of post-war times.

In the North Sea the Americans and British swept their own mine fields. They knew definitely where the mines were located, so that this task, while it took some time and was fraught with great risk, which in more than one case proved disastrous, did not present the problems that confronted those who were engaged in the same work in the Aegean. In this sea the British mines were originally laid hurriedly, at night, and under gun fire, so that it was difficult for those who laid them to be able accurately to indicate on charts where they were laid.

It was known that tens of thousands of mines were anchored just below the surface of the water and we realized that it was practically suicide for any boat of average draught to put to sea there. Though other nations offered their assistance in the sweeping of these mine fields, it remained for the British volunteer crews to do the actual work.

WE HAD a small fleet of about thirty mine sweepers and twenty auxiliary vessels. The boat on which I served after my experiences in the North Sea was an old paddle-wheel vessel which was used as an auxiliary ship and known as H. M. S. Duchess of Norfolk.

Before the war this boat was used in the service between Southampton



Above, the mine spotter's view of the H. M. S. Duchess of Norfolk. Right, deflating the kite balloon after a day's work at sea. Note dam buoys at right for marking spots where mines are found.

ers, while British vessels laid their mine fields off the Dogger Bank. In all, it is estimated that there were as many as 500,000 mines laid in the North Sea alone.





Transferring a kite balloon from shore to ship at the R. A. F. Base on the Isle of Imbros.

and the Isle of Wight by the old London, Brighton and South Coast Railway and had been converted for its service as a mine spotter, being fully equipped for balloon work.

All of the officers and men on these boats were for the most part experienced mine sweeping men, a number of whom had had previous experience in the North Sea. In my case, I had gained experience with Vice Admiral L. G. Preston, C. B., who was the director of mine sweeping of the British Navy.

After studying the situation in the Aegean, it was decided that it would be entirely impractical to attempt to clear that sea and the approach to the Dardanelles without the assistance of kite balloons, and the use of these "sausages" proved absolutely invaluable in the spotting of these mines.

In the North Sea the use of balloons was not necessary, for the lines were more easily picked up, but here in the Aegean, as has been mentioned, the men on the sweepers had little to go by with their very inaccurate charts. At any time these mine sweepers might be blown up while steaming through these mine-infested waters and, despite the valuable assistance of the balloons, work, especially on the fatal N-3 line a number of these ships were lost at near the Dardanelles.

The balloons we used were obtained from the R. A. F. Base at Kephelo, on the Isle of Imbros, which was General Ian Hamilton's old headquarters in the Dardanelles. As a rule, we were towed behind the ships at an altitude of about 800 feet, which was considered the best altitude for visibility in spotting mines under water.

Our usual equipment consisted of a telephone for communication with the ship, a parachute and a pair of binoculars. Of course, the parachutes were of little use at our altitude when mine spotting, for they were carried in case

of emergency in the event that the balloon should break away in one of the frequent storms that we had to contend with, and go up. It gave the balloon officer a chance to get down if there was no other way.

Since we were working in a very hot climate it little mattered what one wore while up in the balloon and frequently a pair of shorts formed a part of our attire.

On an average we spent about six hours at a time up in the balloon, though on one instance I was up for fourteen hours without coming down. This was literally from dawn to dusk, for at the time we were sweeping a very bad area where mines were being spotted in all directions. It seemed at times as if our ship below would at any moment be blown up.

TO PUT it mildly, this was extremely nerve-wracking business and the safety of every man on the ship below often depended on what the balloonist was able to see under water and the directions he was able to transmit to the bridge.

During those summer months dawn broke early over the hills and mountains along the shores of the Aegean, and as soon as we had sufficient light we were able to send up a man and resume operations. We had daylight to work in until quite late in the evening, so that our hours were frequently long.

It was exhausting work, being suspended in a small basket below the big swaying gas bag concentrating continuously on the surrounding sea for hours on hours. Yet there was no rest for this work had to go on ceaselessly in clearing the sea for shipping to and from the Orient and reopening the port of Constantinople. Usually one officer was sent up, though sometimes two and even three went up.

The usual procedure in spotting a mine with the glasses was to phone down to the ship and report its location, such as "Mine bearing green at ninety degrees," or "Line of mines bearing red at forty-five degrees."

The terms green and red were understood to mean starboard and port respectively by the officer on the bridge, while the degrees indicated the angle of direction in which the mine lay from the ship. It was necessary to direct the ship from the air, as without the use of the balloon the ship would be blind as to what was under water. Often, though, the mine could not be seen until the ship seemed to be almost over it, for rough water or very overcast skies interfered with good visibility considerably.

When we could pick up a line of mines we were fortunate, since the mine sweepers who swept the sea behind us could destroy a number in succession. It was our duty as a spotting ship to mark the spot where we had found submerged mines by dropping over dam buoys. The mine sweepers picked up the location from the buoys and swept the sea criss cross with their long cables until the mines were broken



Here we see the observation balloon about to rise from its ship off the Aegean Coast.

from their moorings and floated up to the surface.

Once up, they were fired at and exploded. Rifle fire was often used for exploding the mines, since they were usually destroyed at close range.

During our operations over the Aegean with balloons, our men were continually hampered in their work by violent thunder storms. These storms often came up suddenly and without much warning and were usually accompanied by fierce squalls that made things anything but pleasant for the man in the balloon.

The balloon, when hit by these sudden gusts of wind, pitched and rolled and strained on its cables so much that it was very difficult for the balloonist to carry on with his work. More than once have I been up over a very thickly mined area of sea directing the ship when storms have come up. It takes no great stretch of the imagination to realize how one must feel when supported in a basket beneath a heaving, lurching gas bag containing 32,000 cubic feet of highly inflammable hydrogen gas with lightning flashing all around you!

It was often impossible to get the balloon down on deck on account of the wind, so that the balloon officer was forced to stay up and enjoy the beauties of nature as best he could.

As a rule, the balloon was up all of the time and only lowered to the deck for the balloonist to get in or out or for inflating or deflating. The balloon was safer in the air when not in use than when on deck, for these big ungainly gas bags were great targets for the vagaries of the wind.

The bags were usually refilled with hydrogen gas every two or three days, either at the base on the Isle of Imbros or during the night if we were at sea. In this warm climate the gas supply needed replenishing often as the balloon always leaked a little.

(Continued on page 56)

Amphibian Tricks

(Continued from page 18)

ing the plane that way. For if a turn is made to the right, the left aileron drops, and it presents more surface to the wind than does the lifted one on the right; therefore, the wind from the rear pushes on the left wing and swings the plane to the right.

Ofttimes it is desired to go much slower in a seaplane or amphibian than the lowest idling speed of the engine will permit. The engine speed can then be decreased—first, by retarding the spark; second, by placing the ignition on just one switch, and third, by cutting the engine entirely for a few seconds, just putting the switch back on when the engine is about to stop, keeping up this intermittent action. By this means the speed of the plane on the water can be controlled almost to zero speed.

When landing cross wind, especially on water, it is of paramount importance to keep down the wing that is into the wind. Thus you are not only slipping into the wind, which decreases

your drift across the water, but also when you touch you have less danger of having the wing tip float on the other wing touch. For if that wing tip float should get caught in the water it would swing the plane around, lifting up the windward wing, allowing the wind to get under it, which would probably turn the plane over on its back if the wind was strong.

If the windward wing should catch, it might swing the plane around, but it would head it into the wind, and keep the inside wing from having wind get under it. Of course, it is best to have neither wing tip float touch when landing.

In very rough water with a strong wind blowing it is usually considered best to land directly into the wind, dropping the plane in a few feet in a thorough stall landing. Only if there are huge swells, and a relatively light wind would it be better to land cross wind along the swells. If it is rough, such practice is doubtful, and one should be guided by the circumstances.

It is generally a wise rule always to land into the wind, no matter how the waves are running. On the takeoff it may sometimes, as in the case of big waves going cross wind, be wise to take off along the waves and cross the wind. Yet if the plane can go into the waves without damage, it is best to take off into the wind, and cross the waves that it has kicked up.

In a strong wind, it is sometimes impossible to turn a plane around on water to go down wind. In that case, go backwards down the wind. If the engine is going, just point the engine in the direction toward which you wish the plane to move as it is going backward, and the plane will sail right over even though going backwards.

If the engine has stopped, the tail need but be pointed in a given direction and the plane will go that way. The tail can be pointed by use of the rudder and the ailerons. Thus, with a dead engine, a pilot can direct the sailing of his seaplane or amphibian over an angle of more than ninety degrees.

Such facts as these are of great importance to a pilot in an emergency, and no less valuable in ordinary flying. By heeding and observing just such simple rules as these for the water handling of planes, much damage to seaplanes and amphibians can be prevented.

Spotting Mines

(Continued from page 38)

Balloons were transferred from ship to shore at the R. A. F. base by being pulled over while in the air by a ground crew, since it was much easier for a group of men to handle them that way than to deflate them and carry them on or off the ships.

I ONCE witnessed a stirring sea battle between a shark and a sword fish which, when viewed from the air, provided a thrilling spectacle.

I could not tell who won, because after a short while the sea became covered with blood, but it seemed to me that the shark was being badly beaten while I could see it.

It was also quite possible, when over shallow waters, to look down and see sunken wrecks, many of which were sunk during the war and some of which probably were sunk hundreds of years ago. History goes far back in this Aegean Sea and many famous battles have taken place there.

During my experiences with kite balloons over the Aegean Sea I was in one accident which came after a strenuous day's work as we were proceeding in tow back to our base.

At the time there were three of us in the basket off Dedegatch, a town on the Bulgarian Coast. Our bag was heavy, as one could tell from the angle at which it hung in the air. It had been up all day and the weather was extremely hot. There had been a bit of a breeze blowing and at times the balloon rolled a bit after its natural reaction to the wind.

Suddenly, without any warning, the balloon was caught in an air pocket and dove down into the sea from an altitude of about 1,000 feet, falling in zig-zag fashion in a diagonal course.

The crash was so great that the teak wood boards that formed the floor of the basket were snapped in two. Fortunately all three of us escaped with our lives and the only injuries were suffered by my two fellow officers, who both received broken legs, probably as a result of the breaking of the floor boards.

For my part, I was badly shaken up but was uninjured. Rescue was quick to reach us from the ship which had but a moment before been towing us through the air.

It is difficult to imagine what might have happened if the Aegean had been swept without the valuable assistance rendered by the balloons. As it was, we lost a number of mine sweepers while engaged in this dangerous work, for even the assistance given by the balloons was by no means able to always prevent such accidents.

It was not unusual for a mine sweeper to be towed to its base with its whole stern blown away after striking a mine. More often those who were unfortunate enough to strike a mine sank before they could return to their bases.

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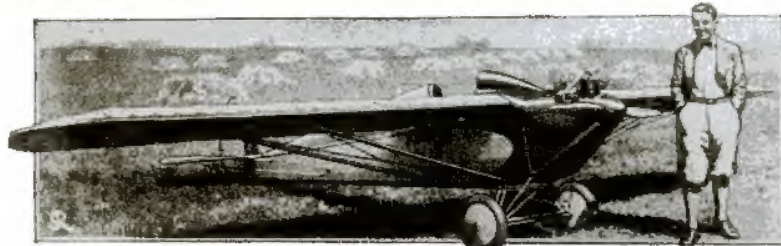
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